

## Investigating the Effectiveness of Group Training Based on Reforming Schema on Improving Individual and Social Health of Mothers' Problems

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### ABSTRACT

**Introduction:** Due to the important role of the mothers in the families, identifying their early maladaptive schema can help us identify the problems that lead to unhealthy life education and provide the necessary and appropriate training programs to improve them. This study uses group training to reform schema in improving mothers' individual and social mental health who consulted the social damage prevention center. The purpose of the study was to determine the effectiveness of reforming schema on a mothers' problems.

**Methods:** In this study, the quasi-experimental method was used. The study population was all the mothers who had parenting problems in the last two years and have consulted the social damage prevention center. Nonrandom sampling was used for our statistical census. Therefore, 100 mothers at hand were selected nonrandomly, and the General Health Questionnaire (GHQ) was conducted on them as a pre-test. Then, 24 mothers who obtained the lowest scores were randomly divided into two groups: experimental and control, in each of which there were 12 participants. The experimental group received training in 10 sections for 90 minutes, while the control group did not receive any training. Afterward, a post-test was conducted for each group, and the results of the two groups were compared.

**Results:** A covariance analysis test was used to test the hyper hypotheses. The results showed a significant difference between the experimental and control groups in the individual's mental health and social mental health variables ( $p < 0.001$ ). Thus, hypotheses 1 and 2 were approved in our study. In other words, the comparison of the average in two variables after the post-test of experimental and control groups showed that mothers trained according to reforming schema, had better social and mental health. With approximately 90%, it can be said that the training based on reforming schema effectively increases the social and individual health of the mothers challenging with parenting problems.

**Keywords:** Reforming schema, Mental health, Mothers' problems

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## Introduction

The family environment is the most important and stable factor in children's social and individual health, and this is good evidence why the mothers' role in forming and promoting individuals in social health is unique (1). Despite different definitions of general, individual, and social mental health, the pioneers believe that harmonic relations with others, changing individual and social environments, solving opposing problems logically, and making life meaningful seem to be suitable for general health (2). An individual is mentally healthy who is away from anxiety, makes constructive relationships with others, and can challenge the pressures of life(3). Any individuals who can come to terms with their problems seem to have mental health (4).

Early maladaptive schemas are the oldest cognitive components and unconditional emotions and beliefs about individuals that arise from the interaction of the child's natural temperament or ineffective experiences with parents, siblings, and peers during the early years of life. These non-controversial schemas increase neurological disorders and psychological problems. They are self-sustaining patterns of memories, emotions, cognitions, senses, and perceptions of humans about the environment. They do their job easier as they used to, and when they face a challenge, they distort the information they receive instead of changing the schema (5, 6). The schema is generally defined as a structure, an outline, or a framework.

Young (1998) believes that schemas are emotional and cognitive patterns formed in the early stages of development and repeat in the course of life. According to this description, an individual's behavior is not part of the schema since Young believes that incompatible behaviors arise in response to the schema. Therefore, behaviors emerge from schemas but are not part of them (5, 7). Young believes that some of these schemas, especially those formed mainly due to bad experiences in childhood, may be the core of personality disorders, cognitive problems, and many chronic disorders. For a closer look at this

idea, Young sets out a set of schemas that have the following characteristics:

- They are profound and in-depth patterns or themes.
- They are composed of memories, emotions, cognitive phenomena, and body feelings.
- They are formed in childhood or adolescence.
- They continue throughout life.
- They are about the self and his/her relation to others.
- They are seriously inefficient.

The schema therapy approach focuses on the self-destructive patterns of thought, emotion, and behavior that are rooted in childhood and repeated throughout the individual's life. These patterns are called early maladaptive schemas in the framework of the term "schema therapy." In childhood, failure to satisfy basic needs (the need for security and acceptance, identity, freedom in expressing healthy needs and emotions, spontaneity and self-restraint) create disruptive schemas.

The findings of the research (20) present a critical review of current literature on parenting and highlight the importance of focusing on parents' growth in therapy. Rodgers (1998) also believes that the negative impact of parental stress on the symptoms of mental illness and mental health of mothers of young children is an undeniable phenomenon. The findings of the research (21) explain it as "the relationship between family functioning and psychological needs with the mental health of adolescents indicating that if the family does not perform its interactive tasks, children will have weak performance in verbal and non-verbal communication, appropriate behavior patterns, and determination of rules for controlling behavior. The researchers emphasize the importance of the relationship between the mental health of mothers and the well-being of the children and state that there is probably an interaction between parents and child's illness when parents and children have a similar disorder. A parent's mental illness increases the likelihood of the child's mental illness (22).

The present research utilizes schema therapy training to study the effectiveness of this treatment on improving mothers' mental health with early maladaptive schemas. Considering the important role of early maladaptive schemas in reducing maternal mental health and also the lack of studies in this field, there is a need for extensive studies and research in this area. Regarding the importance of the subject, this research seeks to answer whether schema therapy training is effective in increasing the mental health of mothers with early maladaptive schemas. The purpose of the study was to determine the effectiveness of reforming schema on a mothers' problems.

## Method

Since schema therapy's effect on improving mothers' mental health was investigated, and it was not possible to control the conditions of the test completely, a quasi-experimental method (pre-test,

post-test with control group) was used in this study. The statistical population of this study was all mothers consulted the Social Injuries Prevention Center. The randomized sampling method was used in our study. One hundred mothers referred to the Social Injuries Prevention Center of Yazd were selected nonrandomly. Young Schema Questionnaire (short form) and General Health Questionnaire (GHQ) were used as the pre-test. Then, 24 mothers who got the lowest score were nonrandomly divided into two experimental and control groups, each having 12 members. The experimental group received ten sessions of 90-minute training, while the control group did not receive any training. Then, a post-test was filled up by both groups. In this applied research, we chose a quasi-experimental with two groups with pre-test, post-test, and a control group because of the type of problem and hypothesis.

**Table 1.** Description of weekly sessions

| session         | Aims and interventions   |
|-----------------|--|
| First session   | Introduction and familiarity with planning and pre-test                            |
| Second session  | Familiarity with basic problems and schemas  |
| Third session   | Teaching areas of incompatible schemas   |
| Fourth session  | Commencing the cognitive techniques  |
| Fifth session   | Continuation of cognitive techniques and finally writing on flashcards             |
| Sixth session   | Commencing experimental techniques   |
| Seventh session | Continuation of experimental techniques and finally writing letters to the parents |
| Eighth session  | Explanation of reaction therapy (interindividual)                                  |
| Ninth session   | Commencing the deconstructive behavior techniques                                  |
| Tenth session   | Continuation of changing behaviors and the contrastive style of post-test          |

After filling up the researcher-made forms of moral and interview, the experimental group participated in a briefing session. Then, they were entered into training intervention held in 10 sessions; each session was 90 minutes. The researcher conducted the sessions in a group format (Table 1). In this study, the researcher used a schema therapy pack of 10 sessions extracted from the book by Jeffery Jung with the title of schema therapy (3). The place of training was the trauma prevention center in Yazd. The mental health test was taken as a pre-test and post-test on experimental and control groups.

Consequently, the research data were analyzed through covariance analysis on 12 individuals in

the experimental and 12 in the control groups. In the end, we conducted the mental health test on the experimental group after a month to follow the effective rate of training based on reforming schema. After the experimental group training, a ten-session training was held for the control group to observe the moral points.

## Tool

The questionnaire, which consisted of closed answers, was used to collect data. Respondents expressed their views in Young's Early Maladaptive Schema Questionnaire, Short Form (YSQ-SF), and General Health Questionnaire (GHQ). Since the 205 items in this questionnaire

were time-consuming, hence its use was problematic(23). For ease of use, Young and Brown formulated a short form for this questionnaire in 1994. Their questionnaire has 75 questions and is planned to measure 15 early cognitive maladaptive schemas. The scoring of the questionnaire was based on the Likert spectrum from 1 to 6 as absolutely wrong, almost wrong, more correct than wrong, slightly correct, almost correct, and absolutely correct: absolutely wrong) (24).

In this questionnaire, every five questions relate to a schema, and if a person has five or six points in two of these five questions, then the schema is likely to be stabilized in his/her mind. Several studies support the reliability of the YSQ-SF questionnaire. In short form, all of the 15 subscales of the Schema Questionnaire had a sufficiently good internal consistency. Cronbach's alpha for all schemas was calculated to be from 0.76 to 0.93. Another study carried out by Calvete examines the internal consistency of YSQ-SF and proves that this questionnaire has acceptable reliability. Cronbach's alpha coefficient for 15 schemas is between 0.61 and 0.85, which is significant (25). YSQ-SF is a standardized questionnaire in Iran provided by Fatehizadeh and Abbasian in 2003 at Isfahan University. Its reliability was calculated to be 0.94 using Cronbach's alpha which was significant (26, 27).

The results of the factor analysis of the study by Vellebren et al. (2002) strongly support the internal structure of the questionnaire. In this study, the relationship between the subscales of the Schema Questionnaire and anxiety, depression, and paranoia symptoms were examined. The results support the structural validity of the questionnaire and show that cognitive schemas are strongly related to pathology symptoms; general Health Questionnaire (GHQ): The main text of the Goldberg Health Questionnaire was developed by Goldberg in 1972 to learn about non-psychotic psychological disorders in health centers in other communities. The original form contains 20 questions. The questionnaire is about the state of sadness, discomfort, and overall individual's

general health, emphasizing psychological, physical, and social issues in the present, leading to the evaluation of the symptoms and health status of the individual. In all questions, subjects must identify options that are more relevant to their circumstances. Shorter forms of the General Health Questionnaire have been prepared according to different cultures. In Iran, 12-item and 28-item forms of this questionnaire have been implemented. The present research uses the 28-item form of the General Health Questionnaire introduced by Goldberg and Hillier in 1979. The questionnaire consists of 28 questions with four options and four scales, each of which has seven questions. 4 scales include physical symptoms, anxiety, social dysfunction, and depression. The first scale (physical symptoms) is related to a person's sense of health, tiredness, and physical symptoms. The second scale (anxiety) is related to anxiety and insomnia. The third scale (social dysfunction) measures the individual's ability to deal with everyday life issues and face life's challenges. The fourth scale (depression) indicates severe depression and suicidal tendencies. The total score of the individual is obtained from the sum of the scores of four scales. The Likert scoring method was used in this questionnaire, which is consisted of (0-1-2-3), so that option A scores 0, option B scores 1, option C scores 2. Option D scores 3. The maximum score of the subject is 84.

It should be noted that achieving high scores reflects low mental health. So far, many studies have been done on the validity of the General Health Questionnaire. In order to validate the reliability of the General Health Questionnaire, the researchers meta-analyzed and the results showed that the mean sensitivity of the 28 items of this questionnaire is 84% (between 0.77 and 0.89) and the average feature is 0.82 (between 0.78 and 0.85). According to Goldberg (1979), an internal physical examination is the most appropriate method for assessing the reliability of the General Health Questionnaire. Goldberg reported a high and acceptable reliability level by studying the researches done in this field, which

was performed in a re-test method and calculated by Cronbach's alpha. The reliability of the 28 item form of the General Health Questionnaire has been 0.91 by Palahang, Barahani, Shahmohammadi (1996). This tool's reliability has been reported as desirable (Yaghobi)(28) with the sensitivity, specificity of the questionnaire, and the validity of re-testing. In addition, the score of the cutoff point was decided to be 23 in Iran. This study has been conducted on Iranian students, and the results showed its reliability and stability. The counted Alpha Cronbach was 0.91. The co-efficient reliability of this questionnaire with the life problems of students was 0.85 (29).

### Data analysis method

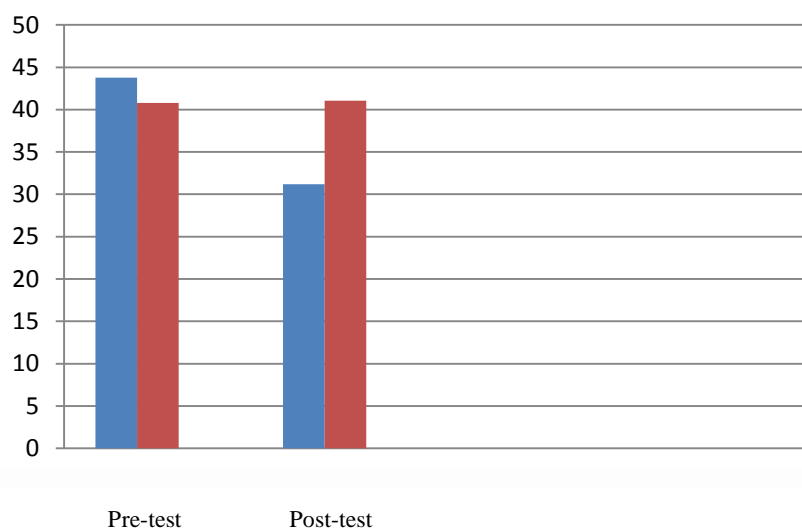
In this study, descriptive statistics (tables, graphs, mean and standard deviation) were used to describe the characteristics of the subjects. According to the research plan, which was done on a two-group plan, a pre-test and post-test, and a control group, the covariance analysis test was used, and the data were analyzed with SPSS software.

### Descriptive index of mental health

Table 2 shows the descriptive indexes (mean and standard deviation) of control and experimental groups in pre-test and post-test stages to measure mental health.

**Table 2.** Descriptive statistics of the mental health variable

| Group        | Test      | N  |       | Description indicator |       |       |
|--------------|-----------|----|-------|-----------------------|-------|-------|
| experimental | Pre-test  | 12 | 43.79 | 15.48                 | 18.00 | 76.00 |
|              | Post-test | 12 | 31.20 | 7.81                  | 18.00 | 46.00 |
| control      | Pre-test  | 12 | 12.17 | 12.17                 | 16.00 | 70.00 |
|              | Post-test | 12 | 12.93 | 12.93                 | 15.00 | 71.00 |



**Chart 1.** Descriptive charts of the mental health variable

The mean for mental health variables in the two experimental and control groups are presented separately in Table 2. The mean in the experimental group was 43.79 in the pre-test, and the mean in the control group in the pre-test was 40.80. It indicates that the groups were close to each other before the schema therapy, but the

experimental group's mean was less than that of the control group in the post-test (the lower score is a sign of higher mental health of the person).

The reliability of this tool has been reported as desirable (Yaghobi) (16). With the sensitivity, specificity of the questionnaire, and the validity of re-testing, the score of the cutoff point was

decided as 23 in Iran. This study has been conducted on Iranian students, and the results showed its reliability and stability. The counted Alpha Cronbach was 0.91. Besides, the coefficient reliability of this questionnaire with the life problems of students was 0.85.

**Hypothesis test**

**Schema therapy is effective in improving mothers' mental health.**

In order to apply the covariance analysis test, we first examined the hypotheses; thus, we used covariance analysis after establishing the hypotheses.

According to Table 3, the homogeneity condition of variances at the  $p > 0.05$  is not significant. Hence the homogeneity of variances hypothesis is assumed.

**Table 3.** Levene test to examine the homogeneity of variances

| Test      | Levene Statistic | Df1 | Df2 | sig   |
|-----------|------------------|-----|-----|-------|
| Pre-test  | 1.356            | 1   | 22  | 0.257 |
| Post-test | 0.009            | 1   | 22  | 0.925 |

**Table 4.** Kolmogorov-Smirnov test to examine the normality of distribution

| Test      | Mean   | Df | Z     | sig   |
|-----------|--------|----|-------|-------|
| Pre-test  | 43.799 | 24 | 0.544 | 0.922 |
| Post-test | 31.200 | 24 | 0.480 | 0.970 |

We used the covariance test to study the training effectiveness of reforming schema on increasing the number of mothers with parenting problems. Before this test, a study of several statistical hypotheses is necessary. The first hypotheses are based on the Kolmogorov-Smirnov test results to decide the normality of distributing the pre-test and post-test scores. The significant level of the counted statistics is for all the variables is  $0.05 \leq$ . Therefore, the hypothesis of scores is accepted. The other hypothesis of conducting the covariance analysis is the conformity of the covariance matrix. To study this hypothesis preciseness, we used the box test. The Significant level of the box test is considered 0.0959. As this amount is larger than the significance level (0.01), the supposition of 0 is the same as the sameness of the covariance matrix.

Another supposition for conducting the covariance analysis test is the harmonies dependent

variables among the groups used to study this hypothesis, and Levene's test was used. Levene's test results for the study of homogeneity of variance were not significant in any variables. Thus, the supposition of our zero-based homogeneity variance of variables is not approved. Therefore, the other supposition of covariance test, the homogeneous variance for health variables with 0.25, is counted.

The Kolmogorov-Smirnov test examined the hypothesis of normal distribution. Since the values of P are larger than (0.05) in the present test compared to the results of Table 4, the distribution is normal.

According to Table 5, the obtained F and the significance level are less than 0.05. It indicates that the linear relationship assumption is also established.

**Table 5.** Linearity test of pre-test and post-test relationship

| Sum of squares | df | F      | Mean squares | sig   |
|----------------|----|--------|--------------|-------|
| 813.700        | 1  | 25.880 | 813.700      | 0.001 |

**Table 6.** F test examines the homogeneity of the slope of regression coefficients

| Sum of squares | df | F      | Mean squares | sig   |
|----------------|----|--------|--------------|-------|
| 813.700        | 2  | 25.880 | 406.855      | 0.060 |

According to table 6, the obtained F and the significance level were greater than 0.05 indicating that the hypothesis of the

homogeneity of the slope of regression coefficients is also established. So, we can use covariance analysis.

**Table 7.** Mental health covariance analysis test in two experimental and control groups

| Source   | Sum of square | df | Mean Square | F      | Sig   | Partial Eta S | Observed Powerb |
|----------|---------------|----|-------------|--------|-------|---------------|-----------------|
| Group    | 607.988       | 1  | 607.988     | 23.633 | 0.001 | 0.619         | 1.000           |
| Pre-test | 804.330       | 1  | 804.330     | 8.810  | 0.001 | 0.682         | 1.000           |
| Error    | 374.253       | 21 | 17.822      |        |       |               |                 |
| Total    | 24563.000     | 24 |             |        |       |               |                 |

According to the results of this method, teaching schema therapy increased mental health in the experimental group. Therefore, it can be said with 95% confidence that education of schema therapy effectively increases mothers' mental health.

## Discussion

### Hypothesis

Schema therapy is effective in improving the mental health of mothers. The findings of our study showed that the training of schema therapy increased the mental health of the experimental group. Thus, we conclude that the teaching of schema therapy effectively increases the mental health of mothers. The present study's findings confirm the hypothesis of the research that teaching schema therapy increases the mental health of the experimental group compared to the control group. It means that there is a significant decrease in the scores of the Mental Health Questionnaire as well as the total score of the questionnaire in the experimental group after applying the independent variable (In this research, a lower score indicates more mental health). Therefore, it can be said that education of schema therapy could significantly increase the mental health of the experimental group. The research carried out on the effects of schema therapy training on the increase of mental health confirms the above results. Jahoda (30) believed that anxiety control (health component) is the basis of mental health and compatibility. In this regard, Lewinsohn and Clarke (31) considered education effective in treating depression (mental health component). The results of Lerner and Clum's (32) research indicate the effect of schema therapy training on decreasing the rate of

depression and disappointment of adolescents who committed suicide. Taremian (1999) also suggested that schema therapy training is effective in increasing physical and mental health such as self-confidence, coping with environmental and psychological stress, reducing anxiety and depression, suicidal ideation, educational failure, strengthening healthy interpersonal communication and social behaviors, decreasing drug abuse and prevention of mental, behavioral and social problems. Tahmasian et al. (2014), in their investigation about the predictors of depression in mothers of children under the age of two in Tehran, concluded that parental stress and parental self-efficacy are the most important predictors of depression in mothers. Also, Jovev et al. (2004) concluded that schema therapy training improves personality disorders and increases mental health. Studies show that children's mothers with mental health problems are significantly more involved in behavioral problems than other children.

Disorders in social performance cause disorder in daily work that includes decision making, feeling of satisfaction for performing duties, and enjoy life. These findings are similar to other researchers who showed that reforming schema effectively decreases depression and anxiety and increases social performance.

Also, a study on children's mothers with mental health shows that the level of responsibility of these children is proportional to the level of care they have from their mothers (33). Findings of the research done by Rahiminejad (2003) (34) show the importance of parents' incompatibility with children and the restless environment of the family on them. As the research in this area has found,

schema therapy training effectively increases mental health, especially in reducing anxiety and depression. Thus, the study results indicate the effect of schema therapy training on promoting mental health, especially the reduction of depression and anxiety. The similarity of this study with the findings of other research is that the greatest effect of schema therapy training on the increase of mental health is related to reducing depression and anxiety. Having a strong, calm, and reliable mother without nervousness and persistent anxiety will be a safe haven for other family members. We can achieve this by providing regular and ongoing consultation with a psychotherapist, teaching a positive parenting program, and behavioral management training. The findings of this study indicate that the rate of physical complaints, obsession and compulsion, interpersonal sensitivity, depression, anxiety, hostility, paranoid thoughts, and psychosis, and others are found more in mothers with maladaptive schemas than in normal mothers. These symptoms affect not only the mother but also the entire family system. As indicated above, the previous studies prove the effect of schema therapy training on improving maternal mental health. The findings of this study also confirm the results of recent research. In our study, with emphasis on the importance of the mother and child relationship and the effect of mothers' early maladaptive schemas on their parenting patterns, attempt was made to reduce the experimental group's scores compared to the control group with the following activities: training the pattern of schema therapy, conceptualizing the maternal problem in the form of schemas, identifying early dysfunctional schemas, identifying domains, processes, schematic behaviors and styles, using cognitive techniques (critical review of supporting evidence of schemas, review and analyzing contradictory evidence with schemas, the technique of providing illustrative educational cards that are contradictory to schemas, and analyzing earnings and losses), using behavioral techniques (elimination of persistent schema behaviors, elimination of avoidance, and enhancing healthy coping

behavior), and using empirical techniques (discussion of past experiences, imaginary conversation with parents, discussion of current events, mental imagery and emotional evacuation. It was found that the approach of schema therapy is consisting of cognitive, behavioral, interpersonal, and empirical approaches in the form of an integrated therapeutic model in which by using four main cognitive, behavioral, interpersonal, and experimental techniques in individuals, can question the maladaptive schemas, as the main cause of ineffective and illogical thoughts, emotionally exhaust the buried emotions, such as anger of unsatisfied spontaneity and attachment needs in the childhood. Another explanation for this finding is the ability to use schema therapy for breaking behavioral patterns. This strategy helps authorities design and implement behavioral assignments to replace incompatible and ineffective coping responses with adaptive behavioral patterns. For instance, in relationship therapy, the therapist tried to satisfy the needs of unsatisfied clients in the framework of the ethics of treatment. The therapist provided the conditions that the referee, who had the maladaptive schema of obedience, would obey less. This client was given the task of writing some criticisms from the therapist in a session. Ultimately, these great and practical benefits of schema therapy increased mental health. The findings of this study showed that the method of schema therapy significantly increased the mental health of mothers with early maladaptive schemas. As a result, schema therapy can be considered one of the effective methods for increasing mental health and can be applied in medical centers. Therefore, counselors and therapists can use the schema therapy method to increase mental health. If the clients increase the use of this method, it is hoped that people can significantly improve their mental health. Our research has made attempts to reduce the risk of intrusive variables and potential interventions by randomly assigning subjects to test and control groups, but the main limitation was the lack of follow-ups. Another limitation was the lack of samples of mothers consulting the Center

for Social Injury Prevention. Therefore, it is suggested to use short and long-term follow-ups in future research. This research can also be compared with other cognitive-behavioral, metacognitive, real therapeutic, and emotional-rational therapy methods. The other suggestion is that this research should be done in other groups to be more precise and reliable in generalizing the results and effectiveness of schema therapy.

### Conclusion

Training individuals regarding the reforming schema was used to evaluate the rightness of their schemas.

Individuals think that schema is an external fact, and they can challenge it with objective pieces of evidence (from cognitive techniques) and experiments (from the results of experimental techniques).

Based on the approach in any mental traumas, there is some link with the specific schemas. Cognitive techniques help individuals to keep away the inhomogeneous schemas. It also helped to know that instead of recognizing schema as an absolute fact about themselves, it is realized as a disturbing problem. Therefore, decreasing

inhomogeneous schemas can play an essential role in increasing an individual's health.

According to the statistical results and clinical observance obtained from this research, group training based on reforming schema to the mothers with parenting problems has an enormous effect on anxiety, depression, invalid feelings, and disappointment.

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The researchers gained all the participants' consent. The researchers were committed to preserving the participant's information.

### Author's contribution

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

### Conflicts of interest

There are no conflicts of interest among the author.

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